KPDES FORM SDAA

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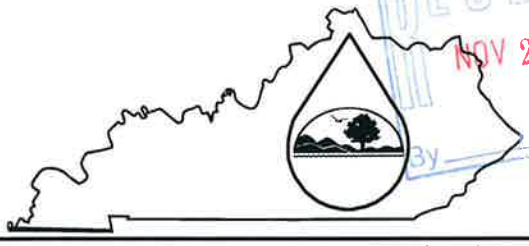

Kentucky Pollutant Discharge Elimination System (KPDES)

Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Project Information

KYG046304

Facility Name: Pick and Shovel Mining, DMRE Permit No. 919-0066

Location: Adjacent to Ky. Rt. 15 near Vortex	**County: Wolfe**

Receiving Waters Impacted: Upper Devils Creek, Kelse Holland Fork, Hollins Fork

II. Socioeconomic Demonstration

1. **Define the boundaries of the affected community:**
(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

The proposed project is located adjacent to Ky. Rt. 15 in central Wolfe County, approximately 4 miles south east of the city of Campton and approximately 1.2 miles south east of the community of Vortex. The nearest receiving streams are Upper Devils Creek, Kelse Holland Fork and Hollins Fork.

2. **The effect on employment in the affected community:**
(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

See Attachment **II** 2.

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Attachment **II** 2.

Employment in the mining industry in Eastern Kentucky is very fluid with mines closing regularly due to coal depletion and new mines opening as coal becomes accessible. When a mine closes there is an immediate impact on the employment of those directly involved in the operation with further impacts felt by those in the local support industry that provide services such as transportation, equipment and engineering.

Wolfe County in Eastern Kentucky where the operation is proposed is an area with few employment opportunities compared to elsewhere in the state and nation. As of August 2009 the county has an unemployment rate of 14.2%, up from 10% in 2008. This compares to a statewide unemployment rate of 6.4% and a nationwide unemployment rate of 5.8% in 2008 (2009 U.S. Department of Labor, Bureau of Labor Statistics).

This operation will provide employment opportunities for at least 10 people on site and these will take the form of new jobs or at the very minimum provide work for those that have lost employment due to mine closure. There is also the potential for increased employment off site by requiring services such as equipment sales and repair, engineering services, fuel, transportation etc.

Any increase in employment opportunities in an area with such high unemployment figures will be beneficial to the local community. It is likely that a new mine will lead to an increase in employment, but at the very least, the mine will avoid a decrease in employment.

II. Socioeconomic Demonstration- continued

3. The effect on median household income levels in the affected community:
(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)

Employment in the mining industry in Eastern Kentucky is very fluid with mines closing regularly due to coal depletion and new mines opening as coal becomes accessible. When a mine closes there is an immediate impact on the employment of those directly involved in the operation with further impacts felt by those in the local support industry that provide services such as transportation, equipment and engineering.

The project will be located in a rural, impoverished area desperately in need of jobs. Wages in the mining industry are significantly greater than the average wage in this part of Kentucky. The average weekly wage in Wolfe County is $484 (2009 US Bureau of Labor Statistics). This is compared to an average weekly wage in the mining industry of $730 in this part of the state (2007 US Bureau of Labor Statistics).

This operation will provide employment directly to approximately 10 workers during the life of the operation. The project will potentially provide additional jobs in other sectors of the economy such as engineering, fuel and transportation, therefore it can be determined that a minimum of 10 households will be positively impacted by this operation.

4. The effect on tax revenues of the affected community:
(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

Tax revenues in this part of Kentucky are affected by the transient nature of employment opportunities. Therefore any increase in the tax base, or at a minimum the maintaining of the status quo prevents there being a negative affect on the local community.

It is anticipated that the operation with a projected life of three years will produce approximately 1,129,945 tons of coal which will give a gross income of approximately $62,146,975. This will lead to federal, state, local and severance tax revenues in the region of $3,389,835. Based on a minimum of ten people being employed during the course of this operation there will be a total of approximately $142,503 paid in federal, state and local taxes by the employees. The extra tax revenue generated by this operation especially that at local and state level will be available to provide public safety (law enforcement, fire protection, ambulance services), environmental protection (sewage disposal, sanitation, solid waste), public transportation, health, recreation, libraries and educational facilities, social services, industrial and economic development, vocational education and workforce training.

The project will be located in a rural, impoverished area desperately in need of jobs. Thus, mining operations positively affect the local economy more so than other industries. The increased tax revenues, in the form of federal, state, local and severance will contribute to spending on the local infrastructure. Production bonuses paid to employees from this operation will make available more money for spending in the local economy therefore benefiting more than those directly involved in the project.

II. Socioeconomic Demonstration- continued

5. The effect on an existing environmental or public health in affected community:
(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

See Attachment **II** 5.

6. Discuss any other economic or social benefit to the affected community:
(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

The facility, a surface and mine will provide employment to approximately 10 workers during the life of the operation. Also, the project will provide additional jobs in other sectors of the economy such as engineering, fuel and transportation. The project will be located in a rural, impoverished area desperately in need of jobs. Wages in the mining industry are significantly greater than the average wage in this part of the state. Thus, mining operations positively affect the local economy more so than other industries. The increased tax revenues, in the form of federal, state, local and severance will contribute to spending on the local infrastructure. Production bonuses paid to employees from this operation will make available more money for spending in the local economy therefore benefiting more than those directly involved in the project.

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Attachment **II** 5.

Some areas of the project have been extensively logged leaving it in less than pristine condition. There are several roads/tracks crossing the proposed permit and there are several abandoned vehicles and pieces of industrial and agricultural equipment left on the area; thus there is sediment being discharged unabated from the project area. Currently storm water runoff is discharged from the project area without passing through any sort of sediment and drainage control structure.

The proposed ponds will collect storm water runoff as it discharges from the mining area. Sediment will settle out of the water before it is discharged downstream from the project area. All runoff from existing disturbances will also be channeled into the ponds and it will be regularly tested before it leaves the permit area. If water quality is found to be potentially detrimental to the stream environment it will be treated. Due to this testing, the water entering the stream is probably going to be of a higher quality than that which naturally enters the watercourse. The retention structures will also increase the sediment control from the existing disturbances.

Following the conclusion of mining, the area will be reclaimed, providing an enhanced habitat and environment. Additionally, recovery of the coal will increase severance tax revenues, which will be returned to the community. This money can be used for environmental protection such as sewage disposal, sanitation and solid waste disposal, which will have beneficial effects on the existing environment.

III. Alternative Analysis

1. Pollution prevention measures:
(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

See Attachment **III** 1.

2. The use of best management practices to minimize impacts:
(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

See Attachment **III** 2.

3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:
(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

See Attachment **III** 3.

Other alternatives reviewed were:

a) Avoiding the project

Avoiding this project would mean that the advantages of economic development in the Wolfe County community area would not be realized. At a minimum, local jobs would be lost, the tax base would diminish ($3,389,835 in severance taxes would not be collected), and local businesses would not prosper to the same extent.

b) Additional Levels of Separation

Further prevention could include covering or treating chemically of reactive materials, reduce the disturbed surface area at any one time, or the separation of normal storm runoff and active site runoff. The increased cost of chemically treating or covering such large areas would be not feasible.

c) Larger Ponds

The building of larger ponds would create additional burden and cost to this project allied to the logistical problems of pond location in an area of small surface disturbance.

d) Preventive Design

Preventive design could include; creating only moderate gradients and inclines to slow down runoff, and diverting waterways and drainage. With these methods, the amount and frequency of flow through active mining sites can be minimized. All the water that does leave the site will be treated with a system of sediment and treatment ponds. Each will store any runoff leaving the site and provide an adequate time to settle the sediment. As necessary and practicable, flocculants and chemicals will be added to treat the water if higher levels of certain chemicals and compounds are observed.

Option "d" is the one preferred for this operation.

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Attachment **III** 2.

The primary discharge from the proposed mining area will be storm water run-off and this will be channeled into sediment ponds prior to discharge. This will allow settling to occur so that lowering of water quality will be reduced based on applicable regulations concerning discharges from the project site.

The proposed ponds will collect storm water runoff as it discharges from the mining area. Sediment will settle out of the water before it is discharged downstream from the project area. All runoff from existing disturbances will also be channeled into the ponds and it will be regularly tested before it leaves the permit area. If water quality is found to be potentially detrimental to the stream environment it will be treated. Due to this testing, the water entering the stream is probably going to be of a higher quality than that which naturally enters the watercourse. The retention structures will also increase the sediment control from the existing disturbances.

The following BMP's will be utilized to aid in sediment control during the construction of the sediment pond, Best Management Practices may include, but are not limited to, any of the following, singly or in combination:

1. Minimizing all necessary disturbances

2. Construction of temporary berms.

3. Diversion ditches, placement of rip-rap, silt fences, straw bale barriers, etc.

4. Land grading, reshaping and immediate revegetation of all disturbed areas

5. Construct ponds in periods of Low Flow or dry weather.

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Attachment **III** 3.

The proposed project area is a surface mining operation, which will recover coal reserves by the contour, and area methods of mining. Water is not an integral part of surface mining operations, however, discharge from the project area, which analysis shows peak elevation to be approximately 390,441,600gpd will be recycled as practicable. Water in the project area can be used for dust control measures, primarily on roads and a small amount can be used on operational areas. However, there are limiting factors to the amount of water that can be directly used on the proposed area. This is an area with slopes averaging more than 36% and water cannot be put on ground slopes greater than 6% because of runoff velocity. Also no more than 1,000 gallons per acre per day can be put on the surface due to soil erosion considerations and the project will only have approximately 2 acres of slope less than 6% at any one time. Due to the requirements of the DMRE concerning reclamation leaving unreclaimed areas large enough for the storage of water is not possible. Additionally, there are no other operations on-site or near-site in which water is used as part of the process.

The facility is projected to have an operational life of 3 years with all retention structures proposed to be removed within another 3 years. Due to the short timescale of the project the use of the structures as a source for drinking water is not considered as a benefit to the local community.

III. Alternative Analysis - continued

4. Application of water conversation methods:
(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

The primary discharge from this operation will be storm water runoff so any waters leaving the confines of the permitted area are only those that would occur naturally.

5 Alternative or enhanced treatment technology:
(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

1) Waste Water Treatment Plant – This was investigated and the cost for a stand-alone treatment plant and reservoir capable of handling the potential amount of water run off from the project would be a minimum of $1,000,000, which would have to be borne out prior to any operations taking place on the project area. Operational and topographic considerations were also taken into account as due to the size of a treatment plant for this operation, the dynamic nature of the project and requirements of the DMRE concerning reclamation, the positioning of this equipment would be extremely problematical. Any treatment plant would need to be constructed and dismantled at least twice during operations adding a minimum of a further $300,000 to the operation. The operation is proposed to generate $62,146,975 with operating and tax costs of $61,017,030 leaving a profit of $1,129,945.

2) The use of an evaporation plant was considered but due to a potential peak flow of 16,268,400gph from the proposed permit area it was deemed not a viable alternative.

3) Wetland – The primary need for treatment of the water is sedimentation control and wetlands are not effective for treating sediment due to the fact that over time they will fill with silt and dry up. Additionally, a wetland used for water treatment would require a great deal of space, which is not available in this project area.

III. Alternative Analysis - continued

6. Improved operation and maintenance of existing treatment systems:
(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

Currently, storm water runoff is discharged from the proposed permit area without passing through any sort of sediment and drainage control structures. Some logging and other surface disturbances (dirt roads/tracks) have occurred in the affected watershed; thus there is sediment being discharged unabated from the project area.

The proposed ponds will collect sediment and storm water as it discharges from a mining area. Sediment will settle out of the water before it is discharged downstream from the project area. All runoff from existing disturbances will also be channeled into the ponds and it will be regularly tested before it leaves the permit area. If water quality is found to be potentially detrimental to the stream environment it will be treated. Due to this testing, the water entering the stream is probably going to be of a higher quality than that which naturally enters the watercourse. The retention structures will also increase the sediment control from the existing disturbances.

7. Seasonal or controlled discharge options:
(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

The primary discharge from this operation will be storm water runoff so any waters leaving the confines of the permitted area are only those that would occur naturally. However, the storage of water for controlled release was investigated but due to DMRE regulations governing the operation appertaining to land stabilization and reclamation it is not possible to leave areas large enough to store water on without any leaving the confines of the project area.

III. Alternative Analysis - continued

8 Land application or infiltration or disposal via an Underground Injection Control Well
(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of .proposed treatment system.)

An alternative to surface discharge from the project area is subsurface disposal. There are no abandoned mine voids in the area that could be used for subsurface water storage. The possibility of the drilling of injection wells for subsurface storage of water has been examined but at a cost of approximately $250,000 per well and the need for at least four wells this would remove the projected profit for the operation.

In addition to potential safety impacts associated with subsurface disposal, this alternative would reduce the quantity of water available to support downstream aquatic communities. Thus, there would be potential impacts to fish and other aquatic communities.

9 Discharge to other treatment systems
(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

See Attachment **III** 9.

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title:	**Jacqueline Stacy, President**	**Telephone No.:**	(606) 668-7156
Signature:	N Jacqueline Stacy	**Date:**	11-17-09

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Attachment **III** 9.

This project proposes to utilize twenty five bench ponds and six embankment ponds to collect storm water runoff that naturally flows over areas of disturbance associated with a surface mine as specified by the appropriate regulations specified by the DMRE.

Although the city of Campton, Kentucky which is approximately 4 miles northwest of the project area has both water and sewer utilities, residents in the area of the proposed project do not have access to these facilities, using wells for water and septic systems for waste disposal.

The utilization of the sewage plant was investigated but Sedcad analysis shows that during a 25 year/24 hour storm, peak elevation in the ponds would be approximately 4,519 gallons per second. This amounts to 390,441,600 GPD which the current facility is not capable of handling. The option of another storage pond, closer to the treatment plant, to be used as a "holding" area before controlled release to the facility was also considered. This would require the purchase of additional land which would need to be incorporated into the mining permit. This "holding" pond would also catch additional runoff thus increasing the output to the treatment plant. Utilising this system would require the construction of a dedicated line to the pond and from the pond to the treatment plant. At a minimum cost of $20 per foot this would give a minimum cost of $422,400 for the pipe alone. The routing of the pipeline would require it to cross Trace Fork, some unnamed tributaries of Swift Camp Creek and several city streets. The planning, design, engineering and construction costs of laying such a line would be in the region of a further $800,000 and at least one pumping station would be required at a cost of approximately $12,000. Assuming Right of Way privileges are granted and compensation with affected landowners can be arranged this will add a projected additional minimum of $80,000 to the cost, giving a total, at minimum of $1,314,400. This outlay would have to be borne out prior to any operations taking place on the project area.

Another option investigated was the trucking of the water to the wastewater plant; this would cost approximately $108 per truck assuming a 2,000 gallon tanker is used. With the estimated peak elevation of 390,441,600 GPD during a 25 year/24 hour storm this would equate to a cost of approximately $21,083,846. This option would also require a very large increase in road traffic between the proposed operation and the treatment facility and with it the extra environmental and safety concerns that this would bring.

The operation as proposed is expected to generate $62,146,975 with operating costs of approximately $57,627,195 over the life of the project. These reflect equipment, payroll, engineering and reclamation fees at $35 per ton, transportation fees at $12 per ton and royalties at $4 per ton. There will also be approximately $3,389,835 in federal, state,

local and coal severance taxes to be paid at $3 per ton giving a total of $61,017,030 leaving a net profit of $1,129,945.